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DURATION AND COST OF FEDERAL COMPENSATION CASES WITH DISEASE AS A COMPLICATING FACTOR¹

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INTRODUCTION

Of interest particularly to legislators, employers, physicians, and to students of labor, sociology, and public health is the amount of compensation paid by States and the Federal Government to employees for injuries connected with occupational diseases. This interest exists at the present time, primarily, because of the fact that sooner or later many State governments will be confronted by the controversial question of whether they shall adopt a system of "schedule coverage" or "blanket coverage" with respect to occupational diseases. In general, schedule coverage provides for the compensation of certain diseases listed in a schedule, while blanket coverage, as the expression implies, provides compensation for all injuries caused by disease. In connection with coverage, the definition of "injury" as set down in the Workmen's Compensation Act of Wisconsin (1), a blanket coverage State for almost 20 years, is pertinent. "*Injury*," the act reads, "is mental or physical harm to an employee caused by accident or disease."

Workmen's compensation acts as originally adopted by the various States concerned themselves primarily with accidents and made little or no provision for occupational diseases. At the time of the writing of these acts it was known that, in a number of employments, disabilities and deaths resulted not only from accidents but also from diseases associated with certain occupations. A situation has developed in which the workmen's compensation laws of the different States are not uniform and vary greatly in the provisions which they contain. Thus in a few States all occupational diseases come under workmen's compensation laws, in other States only certain specified diseases, and in the greater number of States no diseases at all.

Eight States now have blanket coverage. These States are California, Connecticut, Illinois, Massachusetts, Missouri, New York, North Dakota, and Wisconsin. Blanket coverage for diseases is also provided by three Federal laws originally passed in 1916, 1927, and 1928, respectively, and administered by the United States Employees'

¹ From the Office of Industrial Hygiene and Sanitation, U. S. Public Health Service.

Compensation Commission. These laws deal with compensation for, first, civil employees of the United States who suffer personal injury while in the performance of official duty; second, disability or death resulting from injury to certain employees in maritime employment upon the navigable waters of the United States; and, third, disability or death resulting from injury to employees in certain employments within the District of Columbia. With respect to the interpretation of *injury*, the United States Employees' Compensation Commission early took the view that the term covers not only accidents as ordinarily defined, but also any bodily injury or disease due to the performance of duties and causing incapacity for work (2). This interpretation was formally accepted in 1924 in an amendment to the act (3).

With the aid of basic data made available by the United States Employees' Compensation Commission, this paper will present analyses, principally, of the duration and cost of cases in which disease is a complicating factor. These cases occurring among civil employees and therefore coming under the Compensation Act of 1916, involve long-continued or permanent disability (both partial and total) and were incomplete on December 31, 1935, that is, compensation was still being paid on that date.

With regard to the population exposed or the number of civil employees within the scope of the Compensation Act of 1916, it was estimated by the Commission that the number for a period of approximately 15 years prior to 1933 did not exceed 700,000. "The number since 1933 has materially increased, and the Commission believes that at the present time it is probably between 900,000 and 1,000,000. It is impracticable to obtain definite information in this respect because of the difficulty of determining the proper classification of the employees in all emergency employments" (4).

ANALYSIS OF DATA

Year in which injury occurred.—A total of 1,337 incomplete cases in which disease is a complicating factor is available for study. These cases of different degrees of severity are classified according to the year of occurrence of injury in table 1. The partially disabled cases include 953, or 71 percent of the total, while those totally disabled include 384, or 29 percent. Considering all cases, regardless of whether the disability is partial or total, the table shows that almost 25 percent were being compensated on December 31, 1935, on account of injuries that occurred 15 or more years ago, almost 50 percent for injuries that occurred 10 or more years ago, and over 75 percent for injuries that occurred 5 or more years ago. If only the partially disabled cases are considered, over 25 percent were being com-

compensated for injuries that occurred 14 or more years ago, almost 50 percent for injuries that occurred 9 or more years ago, and over 75 percent for injuries that occurred 5 or more years ago; for the corresponding percents of the totally disabled group, the years read, 15 or more, 12 or more, and 7 or more, respectively. Approximately one-half of the totally disabled cases and one-third of the partially disabled ones, respectively, were being compensated for injuries that occurred 12 or more years ago.*

TABLE 1.—*Distribution of incomplete cases in which disease is a complicating factor according to year of occurrence of injury, as of Dec. 31, 1935*

Year of injury	Number of years elapsing since year of injury	All cases			Partial disability			Total disability		
		Number	Per cent	Cumulative percent	Number	Per cent	Cumulative percent	Number	Per cent	Cumulative percent
Total.....		1, 337	100. 0	-----	953	100. 0	-----	384	100. 0	-----
Before 1916.....	More than 19.....	4	0. 3	0. 3	0	0	0	4	1. 0	1. 0
1916.....	19.....	5	. 4	. 7	3	. 3	. 3	2	. 5	1. 5
1917.....	18.....	29	2. 2	2. 9	18	1. 9	2. 2	11	2. 9	4. 4
1918.....	17.....	74	5. 5	8. 4	51	5. 3	7. 5	23	6. 0	10. 4
1919.....	16.....	96	7. 2	15. 6	62	6. 5	14. 0	34	8. 9	19. 3
1920.....	15.....	89	6. 6	22. 2	54	5. 7	19. 7	35	9. 1	28. 4
1921.....	14.....	77	5. 8	28. 0	51	5. 4	25. 1	26	6. 8	35. 2
1922.....	13.....	65	4. 9	32. 9	38	4. 0	29. 1	27	7. 0	42. 2
1923.....	12.....	55	4. 1	37. 0	32	3. 4	32. 5	23	6. 0	48. 2
1924.....	11.....	65	4. 9	41. 9	44	4. 6	37. 1	21	5. 5	53. 7
1925.....	10.....	75	5. 6	47. 5	54	5. 7	42. 8	21	5. 5	59. 2
1926.....	9.....	76	5. 7	53. 2	52	5. 5	48. 3	24	6. 2	65. 4
1927.....	8.....	68	5. 1	58. 3	45	4. 7	53. 0	20	5. 2	70. 6
1928.....	7.....	80	6. 0	64. 3	53	5. 6	58. 6	22	5. 7	76. 3
1929.....	6.....	110	8. 2	72. 5	84	8. 8	68. 2	26	6. 8	83. 1
1930.....	5.....	89	6. 6	79. 1	68	7. 1	75. 3	21	5. 5	88. 6
1931.....	4.....	91	6. 8	85. 9	69	7. 2	82. 5	22	5. 7	94. 3
1932.....	3.....	77	5. 8	91. 7	67	7. 0	89. 5	10	2. 6	96. 9
1933.....	2.....	71	5. 3	97. 0	62	6. 5	96. 0	9	2. 3	99. 2
1934.....	1.....	39	2. 9	99. 9	36	3. 8	99. 8	3	. 8	100. 0
1935.....	Less than 1.....	2	. 1	100. 0	2	. 2	100. 0	0	0	100. 0

Nature of injury.—The distribution of the incomplete cases according to the nature of the injury is given in table 2. Fractures, sprains and strains, and bruises, accounting, respectively, for 38, 16, and 12 percent of all the cases, are the most important of the injuries in this experience, the same order holding for the partially disabled as well as the totally disabled ones. The magnitudes of the corresponding percentages for sprains and strains and for bruises are similar for the two degrees of disability. The percentage for fractures, on the other hand, is approximately 50 percent greater in the group with partial disability.

TABLE 2.—*Distribution of incomplete cases in which disease is a complicating factor according to nature of injury, as of Dec. 31, 1935*

Nature of injury	All cases		Partial disability		Total disability	
	Number	Percent	Number	Percent	Number	Percent
Total.....	1,337	100.0	953	100.0	384	100.0
Fracture.....	507	37.9	398	41.7	109	28.4
Sprain, strain.....	207	15.6	155	16.2	52	13.5
Bruise, contusion, abrasion, blister.....	162	12.1	113	11.9	49	12.8
Cut, laceration.....	74	5.5	70	7.3	4	1.0
Puncture.....	50	4.2	42	4.4	14	3.6
Burn, scald.....	28	2.1	17	1.8	11	2.9
Concussion.....	28	2.1	12	1.3	16	4.2
Amputation.....	17	1.3	16	1.7	1	.3
Dislocation.....	14	1.0	13	1.4	1	.3
Miscellaneous ¹	244	18.3	117	12.3	127	33.0

¹ Includes 100 cases associated with tuberculosis (all forms), 23 with the eye, and 22 with general infections.

Anatomical location of injury.—In table 3 the cases are classified according to the anatomical location of the injury. Considering all cases, the percents confined to the trunk, lower extremities, head, and upper extremities are, respectively, 30, 28, 18, and 11. The percentages for the trunk and head are considerably greater for the totally disabled cases than the corresponding ones for the partially disabled; in the first instance the percentage is 50 percent greater, while in the second instance the figure is more than doubled. The percentages for both extremities are greater for the partially disabled, the lower extremities yielding a figure more than twice as large and the upper extremities yielding one three times as large. However, it is of interest to note that the trunk and lower extremities taken together represent more than one-half of the cases in each class of disability.

TABLE 3.—*Distribution of incomplete cases in which disease is a complicating factor according to anatomical region affected, as of Dec. 31, 1935*

Anatomical region affected	All cases		Partial disability		Total disability	
	Number	Percent	Number	Percent	Number	Percent
Total.....	1,337	100.0	953	100.0	384	100.0
Trunk.....	399	29.9	249	26.1	150	39.1
Lower extremities.....	377	28.2	319	33.5	58	15.1
Head.....	238	17.8	128	13.4	110	28.6
Upper extremities.....	153	11.4	135	14.2	18	4.7
Hand.....	111	8.3	103	10.8	8	2.1
Multiple regions.....	37	2.8	10	1.1	27	7.0
Face and neck.....	4	.3	2	.2	2	.5
Miscellaneous.....	18	1.3	7	.7	11	2.9

Duration of cases and compensation paid according to complicating agent.—The Federal compensation law dealing with civil employees, unlike many other laws relating to the compensation of workmen, does not limit the payment of compensation for permanent partial disability to a scheduled period of weeks or the aggregate amount of

compensation payable for either partial or total disability. In general, compensation for total disability is payable monthly during the period of disability and is equal to two-thirds of the employee's monthly pay. Compensation for partial disability is payable so long as the disability causes a loss in wage-earning capacity, the payable monthly compensation being equal to two-thirds of the difference between the employee's monthly pay and his monthly wage-earning capacity after the beginning of partial disability (5). The employee, then, is compensated in part for economic loss and not for physical impairment. A case, however, may be reopened if it later involves loss in earning capacity (6).²

Each of the 1,337 cases was designated by the Commission as being in one of 7 principal categories. The number of the cases and the corresponding percent associated with each category have been calculated with results as shown in the following tabulation:

	Number	Percent
Total.....	1, 337	100. 0
Diseases resulting from accidental injuries.....	825	61. 8
Diseases activated or aggravated by accidental injuries...	293	21. 9
Infectious diseases.....	75	5. 6
Hernias.....	68	5. 1
Fatigue, strain, posture, lighting.....	30	2. 2
Temperature, moisture, air pressure.....	30	2. 2
Dusts, gases, chemicals.....	16	1. 2

The tabulation shows that a relatively low percentage of the total number of cases of the present experience involves what may be designated occupational diseases. This particular percent is 11.2³ and includes infectious diseases and cases associated with fatigue, strain, posture, and lighting; temperature, moisture, and air pressure; and dusts, gases, and chemicals. Cases resulting from accidental injuries and activated or aggravated by accidental injuries include 83.7 percent of the total. Following the suggestion of various industrial hygienists (7) the hernias are kept separate and the tabulation shows that they accounted for 5.1 percent of all cases.⁴ Many of the diseases, for example, tuberculosis, arthritis, and psychosis, were necessarily included by the Commission in more than one of the seven categories. These diseases have been, respectively, combined for present purposes.

Table 4 shows the duration of the cases and the compensation paid, classified according to the complicating disease, symptom, or other

¹ In connection with this paragraph see a comprehensive table, "Minimum and maximum benefits under workmen's compensation laws by extent of disability and by States", Handbook of Labor Statistics, Government Printing Office, Washington, D. C., 1936 (Bulletin No. 616 of the Bureau of Labor Statistics, pp. 1126-27.)

² This percentage, obviously, would be appreciably smaller if the present experience had included the incomplete cases not associated with disease.

⁴ The classification of cases into those involving accidental injuries, occupational diseases, and hernias is of particular interest at the present time. Comparative analyses based on this classification will appear in some detail in a subsequent paper.

agent. The total duration of all cases amounts to nearly 2.7 million days and is approximately equally divided between the two groups of severity. The total compensation paid is over 7 million dollars, with 54 percent representing the cases with partial disability. Regardless of the degree of disability, arthritis as a complicating factor easily ranks first with respect to the number of cases, duration, and compensation paid. This disease was associated with 24 percent of all the cases, with 22 percent of the total duration of all cases, and with 21 percent of the total compensation paid for all cases. General infections and tuberculosis rank next in importance. In the group of partially disabled cases, bone infections supplant tuberculosis with percents for cases, duration, and compensation reading, respectively, 9, 11, and 10. In the group of totally disabled cases, tuberculosis assumes the place previously occupied by general infections, and neuroses appear in the third position with respect to duration and compensation, the percents being 9 in each instance.

TABLE 4.—Duration of incomplete cases and compensation paid, classified according to the complicating disease, symptom, or other agent, as of Dec. 31, 1935

Complicating disease, symptom, or other agent	Cases		Duration in days to Dec. 31, 1935		Compensation to Dec. 31, 1935			
	Number	Per- cent	Number	Per- cent	Amount	Per- cent	Average per case	Average per case divided by average for all cases
All cases								
Total.....	1, 337	100. 0	2, 685, 584	100. 0	\$7, 143, 884	100. 0	\$5, 343	1. 0
Arthritis.....	318	23. 8	585, 755	21. 8	1, 507, 236	21. 1	4, 740	. 9
General infection.....	154	11. 5	260, 629	10. 0	707, 681	9. 9	4, 595	. 9
Tuberculosis, all forms.....	128	9. 6	311, 048	11. 6	875, 505	12. 3	6, 840	1. 3
Eye.....	105	7. 8	170, 729	6. 4	442, 325	6. 2	4, 213	. 8
Bone infection.....	98	7. 3	199, 895	7. 5	521, 586	7. 3	5, 322	1. 0
Neurosis.....	88	6. 6	218, 228	8. 1	602, 337	8. 4	6, 845	1. 3
Hernia.....	68	5. 1	147, 185	5. 5	385, 528	5. 4	5, 670	1. 1
Veneral disease.....	59	4. 4	95, 848	3. 6	241, 464	3. 4	4, 093	. 8
Gangrene, cellulitis.....	40	3. 0	64, 716	2. 4	155, 905	2. 2	3, 896	. 7
Previous injury.....	37	2. 8	73, 664	2. 8	205, 802	2. 9	5, 562	1. 0
Hemiplegia.....	27	2. 0	73, 526	2. 7	191, 178	2. 7	7, 081	1. 3
Psychosis.....	25	1. 9	74, 375	2. 8	202, 825	2. 8	8, 113	1. 5
Bursitis, synovitis.....	19	1. 4	30, 670	1. 1	82, 381	1. 2	4, 336	. 8
Varicose veins.....	13	1. 0	40, 517	1. 5	102, 172	1. 4	7, 859	1. 5
Spondylitis.....	9	. 7	13, 634	. 5	39, 016	. 5	4, 335	. 8
Heart disease.....	8	. 6	21, 548	. 8	58, 736	. 8	7, 842	1. 4
General paralysis.....	7	. 5	17, 345	. 6	47, 635	. 7	6, 805	1. 3
Neoplasm.....	5	. 4	16, 953	. 6	46, 031	. 7	9, 856	1. 8
Lead.....	5	. 4	14, 668	. 5	41, 856	. 6	8, 371	1. 6
Miscellaneous ¹	35	2. 6	74, 990	2. 8	203, 563	2. 8	5, 816	1. 1
Diseases, n. o. c.....	89	6. 6	170, 661	6. 4	482, 222	6. 7	5, 418	1. 0

See footnotes at end of table.

TABLE 4.—Duration of incomplete cases and compensation paid, classified according to the complicating disease, symptom, or other agent, as of Dec. 31, 1935—Contd.

Complicating disease, symptom, or other agent	Cases		Duration in days to Dec. 31, 1935		Compensation to Dec. 31, 1935			
	Number	Per cent	Number	Per cent	Amount	Per cent	Average per case	Average per case divided by average for all cases
Partial disability								
Total.....	953	100.0	1,383,623	100.0	\$3,822,558	100.0	\$4,011	0.8
Arthritis.....	248	26.0	334,740	24.2	912,302	23.9	8,679	.7
General infection.....	143	15.0	233,623	16.9	620,163	16.2	4,337	.8
Tuberculosis, all forms.....	65	6.8	106,836	7.7	302,532	7.9	4,654	.9
Eye.....	72	7.6	62,006	4.5	178,601	4.7	2,481	.6
Bone infection.....	84	8.8	149,866	10.8	392,914	10.3	4,678	.9
Neurosis.....	57	6.0	103,584	7.5	296,847	7.7	5,208	1.0
Hernia.....	46	4.8	65,196	4.0	161,958	4.2	3,521	.7
Venereal disease.....	48	5.1	62,136	4.5	155,630	4.1	3,242	.6
Gangrene, cellulitis.....	37	3.9	56,639	4.1	132,531	3.5	3,582	.7
Previous injury.....	24	2.5	33,233	2.4	98,044	2.6	4,085	.8
Hemiplegia.....	11	1.2	14,769	1.1	60,633	1.3	4,603	.9
Psychosis.....	4	.4	6,449	.5	24,956	.6	6,239	1.2
Bursitis, synovitis.....	18	1.9	24,714	1.8	71,354	1.9	3,964	.7
Varicose veins.....	7	.7	16,003	1.1	44,209	1.1	6,316	1.2
Spondylitis.....	7	.7	10,129	.7	31,147	.8	4,450	.8
Heart disease.....	3	.3	4,312	.3	11,404	.3	3,801	.7
General paralysis.....	0	0	0	0	0	0	0	0
Neoplasm.....	2	.2	3,601	.3	10,171	.3	5,086	1.0
Lead.....	3	.3	3,937	.3	16,068	.4	5,356	1.0
Miscellaneous ¹	17	1.8	23,778	1.7	67,726	1.8	3,984	.7
Diseases, n. o. c.....	57	6.0	78,072	5.6	243,368	6.4	4,270	.8
Total disability								
Total.....	384	100.0	1,301,961	100.0	\$3,321,326	100.0	\$8,649	1.6
Arthritis.....	70	18.2	251,015	19.3	594,934	17.9	8,499	1.6
General infection.....	11	2.9	36,006	2.8	87,518	2.6	7,956	1.5
Tuberculosis, all forms.....	63	16.4	204,212	15.7	572,973	17.3	9,095	1.7
Eye.....	33	8.6	108,723	8.4	263,724	7.9	7,992	1.5
Bone infection.....	14	3.6	50,029	3.8	128,672	3.9	9,191	1.7
Neurosis.....	31	8.1	114,644	8.8	305,490	9.2	9,855	1.8
Hernia.....	22	5.7	91,989	7.1	223,570	6.7	10,162	1.9
Venereal disease.....	11	2.9	33,712	2.6	85,834	2.6	7,803	1.5
Gangrene, cellulitis.....	8	.8	8,077	.6	23,374	.7	7,791	1.5
Previous injury.....	18	3.4	40,431	3.1	107,758	3.3	8,289	1.6
Hemiplegia.....	16	4.2	58,757	4.5	140,545	4.2	8,784	1.6
Psychosis.....	21	5.5	67,926	5.2	177,869	5.4	8,470	1.6
Bursitis, synovitis.....	1	.2	5,956	.5	11,027	.3	11,027	2.1
Varicose veins.....	6	1.6	24,514	1.9	57,963	1.8	9,660	1.8
Spondylitis.....	2	.5	3,505	.3	7,869	.2	3,934	.7
Heart disease.....	5	1.3	17,236	1.3	47,332	1.4	9,466	1.8
General paralysis.....	7	1.8	17,845	1.3	47,635	1.4	6,805	1.3
Neoplasm.....	3	.8	13,352	1.0	36,760	1.1	12,253	2.3
Lead.....	2	.5	10,731	.8	25,788	.8	12,694	2.4
Miscellaneous ¹	18	4.7	51,212	3.9	135,837	4.1	7,546	1.4
Diseases, n. o. c.....	82	8.3	92,589	7.1	238,854	7.2	7,464	1.4

¹ Includes fewer than 5 cases associated with each of the following: Poisons, n. o. c.; dusts, gases, chemicals, n. o. c.; dermatitis, n. o. c.; pneumonia; sunstroke, heat exhaustion; frostbite, freezing; caisson disease; neuritis; fatigue, n. o. c.; laboratory infection; diseases following prophylactic treatment; diabetes; endarteritis gangrene; nephritis; ganglion; neurasthenia; orchitis, epididymitis; and peritonitis. N. o. c.—not otherwise classified.

² Based on fewer than 5 cases.

Table 4 also gives the average compensation paid per case for each disease or other associated agent, and the ratio of this average to the average compensation paid for all 1,337 cases. The average compensation per case, considering all cases, was \$5,343. The average paid for partial disability cases was \$4,011 while the average paid for cases with total disability was more than twice this amount, namely, \$8,649. In the partial disability group the highest average, \$6,316, was paid for cases associated with varicose veins; this average, when averages based on fewer than 5 cases are disregarded, was followed by \$5,208 for neuroses. The lowest average, \$2,481, was paid for eye cases. Again disregarding averages based on fewer than 5 cases, hernias led in the total disability group with an average of \$10,162, followed by neuroses with \$9,855. In this group the lowest average, \$6,805, was for cases with general paralysis. It will be seen that the highest average yielded by the cases with partial disability is lower than the lowest average yielded by the cases with total disability, and that the neuroses ranked second in either group of disability.

With regard to the ratio of the average compensation paid per case to the average for all cases (table 4), it is sufficient to say that the ratios for the partially disabled cases are generally less than 1 while the ratios for the totally disabled ones are well over 1. In other words, the average compensation paid per case with partial disability and specific for agent was generally less than the average for all cases regardless of degree of disability and agent; further, the average compensation per case with total disability and specific for agent was from 0.3 to 0.9 greater than the average compensation paid for all cases regardless of disability and agent.

Duration of cases, compensation paid, and estimated future cost, by year of occurrence of injury.—The duration of cases and compensation paid have been reclassified and are shown in table 5 according to year of occurrence of injury. In addition to data concerning these items, the future cost of each case as estimated by the Commission was made available. These data have been reduced and the results have been made a part of table 5.

TABLE 5.—Duration of incomplete cases, compensation paid, and estimated future cost according to year of occurrence of injury, as of Dec. 31, 1935

Year of injury	Duration in days to Dec. 31, 1935		Compensation to Dec. 31, 1935		Estimated future cost		
	Number of cases	Number	Percent	Amount	Percent	Amount	Percent
All cases							
Total.....	1,337	2,685,584	100.0	\$7,143,884	100.0	\$8,221,841	100.0
Before 1916.....	4	9,604	.4	19,748	.8	37,209	.4
1916.....	5	10,948	.4	24,002	.8	20,366	.2
1917.....	29	81,355	3.0	180,783	2.5	111,341	1.4
1918.....	74	238,919	8.8	599,237	8.4	473,069	5.7
1919.....	96	318,317	11.8	808,454	11.3	572,713	7.0
1920.....	89	290,619	10.8	762,304	10.7	547,106	6.7
1921.....	77	218,069	8.1	570,775	8.0	440,906	5.4
1922.....	65	185,194	6.9	469,029	6.4	438,326	5.3
1923.....	55	153,348	5.7	402,434	5.6	428,992	5.2
1924.....	65	147,129	5.5	398,649	5.6	390,588	4.7
1925.....	75	155,241	5.8	422,766	5.9	465,804	5.7
1926.....	76	149,404	5.6	445,749	6.2	508,812	6.2
1927.....	68	117,602	4.4	335,205	4.7	467,203	5.6
1928.....	80	145,154	5.4	404,811	5.7	559,370	6.8
1929.....	110	142,870	5.3	400,079	5.9	656,828	8.0
1930.....	89	107,482	4.0	308,221	4.3	570,629	6.9
1931.....	91	91,087	3.4	245,145	3.4	549,445	6.7
1932.....	77	63,236	2.4	174,067	2.5	359,517	4.4
1933.....	71	42,678	1.6	111,414	1.6	400,072	4.9
1934.....	39	18,891	.7	48,881	.7	225,149	2.7
1935.....	2	637	(1)	2,033	(1)	8,400	1.1
Partial disability							
Total.....	952	1,383,623	100.0	\$3,822,558	100.0	\$3,030,865	100.0
Before 1916.....	0	0	0	0	0	0	0
1916.....	3	5,896	.4	12,581	.3	4,689	.2
1917.....	18	31,130	2.2	70,692	1.8	36,601	1.2
1918.....	51	111,201	8.0	283,795	7.4	203,195	6.7
1919.....	62	159,077	11.5	419,446	11.0	191,302	6.3
1920.....	54	121,848	8.8	339,262	8.9	166,991	5.5
1921.....	51	105,052	7.6	307,329	8.0	173,260	5.7
1922.....	38	69,400	5.0	179,956	4.7	116,655	3.9
1923.....	32	66,478	4.8	188,221	4.9	115,561	3.8
1924.....	44	70,527	5.1	211,232	5.5	166,546	5.5
1925.....	54	92,537	6.7	252,590	6.6	185,313	6.1
1926.....	52	80,466	5.8	243,651	6.4	152,720	5.0
1927.....	48	67,120	4.9	187,087	4.9	164,663	5.4
1928.....	58	89,909	6.5	247,564	6.5	188,839	6.2
1929.....	84	88,195	6.4	264,193	6.9	240,078	7.9
1930.....	68	66,112	4.8	196,529	5.1	189,920	6.3
1931.....	69	56,035	4.1	145,493	3.8	186,203	6.2
1932.....	67	50,648	3.7	189,548	3.7	183,497	6.1
1933.....	62	34,382	2.5	88,877	2.3	194,840	6.4
1934.....	36	17,073	1.2	44,479	1.2	161,592	5.3
1935.....	2	637	(1)	2,033	.1	8,400	.3
Total disability							
Total.....	384	1,301,961	100.0	\$3,321,326	100.0	\$5,190,976	100.0
Before 1916.....	4	9,604	.7	19,748	.6	37,209	.7
1916.....	2	5,052	.4	11,421	.4	15,677	.3
1917.....	11	50,225	3.9	110,091	3.3	74,740	1.4
1918.....	23	125,718	9.7	315,442	9.5	269,874	5.2
1919.....	34	159,240	12.2	389,008	11.7	381,411	7.4
1920.....	35	168,671	12.9	423,042	12.7	380,115	7.3
1921.....	26	113,017	8.7	263,446	7.9	267,646	5.2
1922.....	27	115,794	8.9	279,073	8.4	321,671	6.2
1923.....	23	86,870	6.7	216,213	6.5	313,431	6.0
1924.....	21	76,602	5.9	187,417	5.7	224,040	4.3
1925.....	21	62,704	4.8	170,176	5.1	280,491	5.4
1926.....	24	68,938	5.3	202,068	6.1	356,092	6.9
1927.....	20	50,482	3.9	148,118	4.5	292,540	5.6
1928.....	23	55,245	4.2	157,247	4.7	370,531	7.2
1929.....	26	54,675	4.2	155,886	4.7	416,748	8.0
1930.....	21	41,370	3.2	111,692	3.4	380,709	7.3
1931.....	22	35,052	2.7	99,650	3.0	363,242	7.0
1932.....	10	12,588	1.0	34,519	1.0	176,020	3.4
1933.....	9	8,296	.6	22,537	.7	205,232	4.0
1934.....	8	1,818	.1	4,502	.1	63,557	1.2
1935.....	0	0	0	0	0	0	0

1 Less than 0.1 of 1 percent.

A number of interesting facts are disclosed by the table. While the partial disability cases are almost two and one-half times as many as those with total disability, their total durations and total paid compensation, respectively, are similar in magnitude. The estimated future cost of the total disability cases, however, is almost 75 per cent greater than the future cost estimated for the cases with partial disability. With respect to the cases with partial disability almost one-half of the total duration and one-half of the total compensation paid, respectively, are accounted for by injuries that occurred 12 or more years ago; the corresponding time for the cases with total disability is 14 or more years.

TABLE 6.—*Compensation paid for each case per day of duration, as of Dec. 31, 1935*

Class interval in dollars	Number			Percent		
	All cases	Partial disability	Total disability	All cases	Partial disability	Total disability
Total.....	1, 337	953	884	100. 0	100. 0	100. 0
0.35-0.59.....	1	1	0	.1	.1	0
0.60-0.84.....	7	5	2	.5	.5	.5
0.85-1.09.....	5	4	1	.4	.4	.3
1.10-1.34.....	14	12	2	1.1	1.3	.5
1.35-1.59.....	18	11	7	1.4	1.2	1.8
1.60-1.84.....	54	29	25	4.0	3.0	6.5
1.85-2.09.....	147	107	40	11.0	11.2	10.4
2.10-2.34.....	250	179	71	18.7	18.8	18.5
2.35-2.59.....	149	98	51	11.1	10.3	13.3
2.60-2.84.....	167	121	46	12.5	12.7	12.0
2.85-3.09.....	118	81	37	8.8	8.5	9.6
3.10-3.34.....	107	69	38	8.0	7.3	9.9
3.35-3.59.....	72	53	19	5.4	5.6	8.0
3.60-3.84.....	94	61	33	7.0	6.4	8.6
3.85-4.09.....	61	44	7	4.8	4.6	1.8
4.10-4.34.....	29	27	2	2.2	2.8	.5
4.35-4.59.....	44	41	3	3.3	4.3	.8
4.60-4.84.....	3	3	0	.2	.3	0
4.85-5.09.....	2	2	0	.1	.2	0
5.10-5.34.....	4	4	0	.3	.4	0
6.85-7.09.....	1	1	0	.1	.1	0
Mean.....	\$2.759	\$2.802	\$2.651	-----	-----	-----
	±. 015	±. 018	±. 023	-----	-----	-----
Standard deviation.....	\$0.787	\$0.825	\$0.671	-----	-----	-----
	±. 010	±. 013	±. 016	-----	-----	-----

Average compensation per day of duration for each case.—The compensation for each case per day of duration has been calculated and the results are shown in the form of frequency distributions in table 6. The average daily compensations for all cases, cases with partial disability, and cases with total disability range, respectively, from \$0.40 to \$5.33, with one case at \$7.09; from \$0.40 to \$5.33, with one case at \$7.09; and from \$0.78 to \$4.46. The means are, respectively, \$2.76, \$2.80, and \$2.65, and the standard deviations \$0.79, \$0.83, and \$0.67. When the frequency distributions are plotted on ordinary cross-section paper ⁵ they show a rapid rise over six or seven class intervals to the interval \$2.10–\$2.35; thereafter there is a slow decline.

⁵ The graphs are omitted.

The distributions for all cases and the partially disabled ones show the decline over 12 class intervals; the distribution for the totally disabled cases shows the decline over 9 class intervals. The distributions are, therefore, skew and the mode in each instance is to the left of the mean. The shapes of the distributions for the partial and total disability cases appear in general to be similar, and calculations show that the two distributions together with the distribution for all cases may be represented probably by the same type of Pearsonian frequency curve.⁶ A probability test, however, shows what was expected to be disclosed by an inspection of the graphs of the distributions, namely, that partial and total disability select differently with respect to compensation per day of duration for each case.⁷

In the preceding discussion average daily rates were computed for calendar days of duration. In connection with rates computed for compensated days, Secretary McCauley of the Commission states in a personal communication that "The maximum compensation rate in the case of a person employed 6 days per week is a per-diem wage of \$4.47 and in the case of a 5-day week \$5.36. The minimum per-diem rates are, respectively, \$2.24 and \$2.68."

SUMMARY

This paper deals with the duration and cost of incomplete cases in which disease is a complicating factor occurring among civil employees of the United States Government. The cases are incomplete in the sense that they were still being compensated on December 31, 1935.

The Federal act providing for this compensation was established in 1916 and has been administered by the United States Employees' Compensation Commission. The estimated number of employees within the scope of the act for a period approximately 15 years prior to 1933 did not exceed 700,000. Since 1933 the number has increased to between 900,000 and 1,000,000.

The paper may be conveniently summarized as follows:

(1) Of the 1,337 incomplete cases, 84 percent resulted from accidental injuries or were activated or aggravated by them. About 11 percent of the total cases involved what may be designated occupational diseases. About 5 percent of the total cases were accounted for by hernias.

(2) Of the 1,337 incomplete cases, 71 percent were partially disabled; the remainder were totally disabled.

(3) Almost 50 percent of all cases were compensated for injuries that occurred 10 or more years ago.

⁶ Distribution:

	β_1	β_2
All cases.....	0.2938±0.0460	3.1024±0.1242
Partial disability.....	0.3060±0.0673	3.3619±0.2106
Total disability.....	0.0596±0.0279	2.6923±0.1201

⁷ The chi square yields a P of less than 0.0003.

(4) Fractures, sprains and strains, and bruises accounted, respectively, for 38, 16, and 12 percent of all cases.

(5) The percents of all cases confined to the trunk, lower extremities, head, and upper extremities were, respectively, 30, 28, 18, and 11.

(6) The total duration of all cases amounted to nearly 2.7 million days and was approximately equally divided between the partially and totally disabled groups.

(7) The total compensation paid was over 7 million dollars, with 54 percent representing the cases with partial disability. The average compensation paid per case was \$5,343. The estimated future cost of the 1,337 cases is over 8 million dollars.

(8) Regardless of the degree of disability, arthritis as a complicating factor easily ranked first with respect to the number of cases, total duration, and total compensation paid. This disease was associated with 24 percent of all the cases, with 22 percent of the total duration of all cases, and with 21 percent of the total compensation paid for all cases. General infections and tuberculosis ranked next in importance as complicating factors.

(9) Regardless of the complicating disease, symptom, or other agent and the degree of disability, the average compensation per calendar day of duration per case was \$2.76. With respect to rates computed for compensated days, the maximum compensation rate in the case of a person employed 6 days per week is a per-diem wage of \$4.47 and in the case of a 5-day week \$5.36. The minimum per-diem rates are, respectively, \$2.24 and \$2.68.

ACKNOWLEDGMENTS

The author is indebted to Chairman Jewell W. Swofford, of the United States Employees' Compensation Commission, for making possible the preparation of this paper; to Dr. F. M. Phillips for providing the basic data; and to Secretary William McCauley for helpful interpretations.

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- (2) United States Employees' Compensation Commission: (1918) Second Annual Report, July 1, 1917, to June 30, 1918. Government Printing Office, Washington, D. C. P. 22.
- (3) Idem: (1926) Tenth Annual Report, July 1, 1925, to June 30, 1926. P. 1.
- (4) Idem: (1936) Nineteenth Annual Report, July 1, 1934, to June 30, 1935. P. 3.
- (5) Idem: (1917) First Annual Report, September 7, 1916, to June 30, 1917. P. 39.
- (6) Idem: (1932) Sixteenth Annual Report, July 1, 1931, to June 30, 1932. Pp. 12, 15.
- (7) Committee on Research and Standards, American Public Health Association: [1931] Report of Committee on Standard Practices in the Problem of Compensation of Occupational Diseases. (Short title: Occupational Disease Legislation.) Published for the American Public Health Association by the Chemical Foundation. N. p. P. 92.

ORNITHODOROS TURICATA: THE POSSIBLE VECTOR OF RELAPSING FEVER IN SOUTHWESTERN KANSAS

Preliminary Report¹

By GORDON E. DAVIS, *Bacteriologist, United States Public Health Service*

Dr. Harold O. Closson has reported 11 cases of relapsing fever as having occurred in Clarke County, Kans., 1931-34 (1). Other cases have been reported subsequently from this and nearby counties. There has been no information as to the possible vector.

In late August and early September 1936 the writer and two assistants were detailed from the Rocky Mountain Laboratory for local studies as to the transmitting agent. Approximately 2,000 specimens of *Ornithodoros turicata*, hitherto not known to occur in Kansas, were recovered in Clarke County. The various stages of this tick were found in rodent burrows, in holes in sand, and attached to cottontail rabbits, one immature jack rabbit, spermophiles, prairie dogs, prairie-dog owls, and terrapins. Eleven hundred and ninety-seven ticks were removed from a single sand hole which contained 11 terrapins (*Terrapene ornata*). These ticks were later tested for spirochetes at the Rocky Mountain Laboratory by permitting them to engorge on white rats. Three strains of spirochetes were recovered from three localities, viz, from ticks collected from a prairie-dog burrow in the south central part of Clarke County, from a sand hole (no host present) in the extreme eastern part, and from a cottontail rabbit burrow in the face of a limestone outcropping in the extreme western part. The prairie-dog burrow was located on a ranch where a case of relapsing fever had occurred.

From the above data it seems reasonable to believe that *O. turicata* may be implicated in relapsing fever transmission in this area.

REFERENCE

- (1) 1934. The Journal of the Kansas Medical Society, vol. 35, no. 2.

WHAT IS HAPPENING IN COUNTY HEALTH DEPARTMENTS?

The question as to what is happening in county health departments has been answered by the United States Public Health Service in an analysis of the annual reports on budget and personnel of every county health department that was in operation at any time during the years 1908-34, inclusive.² These data were used to define the period of operation and to depict the growth or retrogression that occurred.

¹ Contribution from the Rocky Mountain Laboratory, United States Public Health Service, Hamilton, Mont. Manuscript submitted for publication Nov. 14, 1936.

² Experience of the health department in 811 counties, 1908-34. By Joseph W. Mountin, Elliott H. Pennell, and E. Evelyn Flook. Public Health Bulletin No. 230, Government Printing Office, Washington, D. C., 1936.

Kentucky was the first State to report the existence of a county health department which satisfied the definition used in this bulletin; namely, a county-wide public health service under the direction of a full-time professional health officer. This development occurred during 1908 in Jefferson County, a suburban county surrounding Louisville. Three years later, two services of this general type for rural areas began almost simultaneously in Yakima County, Wash., and in Guilford County, N. C. From these three foci the movement spread to practically all parts of the United States. In all, 811 counties maintained health department service for some period during the years from 1908 through 1934.

The county health department movement did not progress evenly when considered from the standpoint of either chronology or location. Comparatively few counties elected this type of service until after the close of the World War. From that time on to 1932 there was a continuous increase in the number, with distinct acceleration in the rate of growth during 1920-21, 1927-28, and 1931. In 1932 more counties terminated than established services. This reversal in trend continued through 1933, but growth was resumed in 1934.

About 68 percent of the counties which operated health department service are located in the Southern States. The lowest percentages of counties with service so organized are to be found in the West, North Central, and Middle Atlantic States. At the close of the study period Delaware and Maryland were in the honor roll with all counties maintaining full-time health service. In several States the percentage was well over 50. All county health departments did not survive; 270 ceased to operate before the close of 1934. Of this number, 40 reestablished the service, which was in operation at the close of the period.

By comparing the size of staff during the last year of operation with the size during the first year, it was found that one-half of the staffs increased in size and the others remained static or receded. The showing was somewhat better, though not strikingly so, when the size of staff on the year of maximum budget was compared with that on the first and the last year of health department service.

For several years following the establishment of the first county health department, the service was supported with funds derived from local sources. Later the States became important contributors, in some places taking over all or a major part of the burden. Generally speaking, the States in granting aid have favored the counties least able to support the service. The Federal Government and several nonofficial agencies have made important financial contributions, but the amount given in different years fluctuated over a wide range. Presumably funds were granted for the purpose of initiating the work, but with the expectation that in following years responsibility for

financial support would be transferred to State and local official agencies.

Certain combinations of circumstances seem to favor the establishment and growth of county health departments. Under other conditions, this form of organization has not prospered. The many factors which seem to influence the behavior of counties in this regard are considered in the report.

This bulletin should be of interest and value to all health workers, but especially to those who are charged with responsibility for providing modern public health service in those areas where the county may be utilized as an administrative unit.

DEATHS DURING WEEK ENDED NOVEMBER 21, 1936

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Nov. 21, 1936	Corresponding week, 1935
Data from 86 large cities of the United States:		
Total deaths.....	8, 208	8, 022
Deaths per 1,000 population, annual basis.....	11. 5	11. 2
Deaths under 1 year of age.....	490	519
Deaths under 1 year of age per 1,000 estimated live births.....	44	48
Deaths per 1,000 population, annual basis, first 47 weeks of year.....	12. 0	11. 3
Data from industrial insurance companies:		
Policies in force.....	68, 670, 288	67, 760, 086
Number of death claims.....	13, 283	13, 071
Death claims per 1,000 policies in force, annual rate.....	10. 1	10. 1
Death claims per 1,000 policies, first 47 weeks of year, annual rate.....	9. 8	9. 5

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended November 28, 1936, and November 30, 1935

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Nov. 28, 1936, and Nov. 30, 1935

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935
New England States:								
Maine.....	2	1	9		11	74	0	1
New Hampshire.....	3				1	2	0	0
Vermont.....					1	25	0	1
Massachusetts.....	5	12			158	60	8	8
Rhode Island.....	3				94	14	0	0
Connecticut.....	1	4	1	18	43	29	0	2
Middle Atlantic States:								
New York.....	27	42	111	114	120	397	12	6
New Jersey.....	18	21	14	7	81	12	2	0
Pennsylvania.....	36	35			57	48	3	2
East North Central States:								
Ohio.....	41	89	28	70	12	65	26	0
Indiana.....	19	47	8	35	7	12	1	4
Illinois.....	36	61	9	16	13	12	5	9
Michigan.....	36	30	2	2	81	16	4	2
Wisconsin.....	3	4	12	34	20	57	2	2
West North Central States:								
Minnesota.....	12	7	1	1	7	49	2	1
Iowa.....	18	18	1	7	5	5	0	3
Missouri.....	28	75	90	95	6	26	7	3
North Dakota.....	1		50			12	0	0
South Dakota.....	1				8	8	0	0
Nebraska.....	4	7		1	1	9	0	2
Kansas.....	11	15	1	16	5	8	2	1
South Atlantic States:								
Delaware.....	2	1			2	82	0	0
Maryland ¹	16	13	9	3	75	15	3	5
District of Columbia.....	14	22	1		2	1	0	0
Virginia.....	55	49			34	11	8	0
West Virginia.....	20	49	20	25		9	5	0
North Carolina ²	100	60	12	6	41	9	4	1
South Carolina ²	21	4	213	162	17	1	4	0
Georgia ³	39	22		19			0	2
Florida.....	9	10	3	6			0	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Nov. 28, 1936, and Nov. 30, 1935—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935
East South Central States:								
Kentucky.....	11	36	17	9	4	31	8	1
Tennessee ¹	43	57	63	34	7	2	2	6
Alabama ¹	44	34	104	53	1	6	2	2
Mississippi ¹	12	9					0	0
West South Central States:								
Arkansas.....	4	17	18	51			0	1
Louisiana ²	12	34	16	11	3	11	1	0
Oklahoma ¹	15	20	66	99	7		3	0
Texas ¹	62	155	109	218	25	5	1	3
Mountain States:								
Montana.....	1	1	3	6	4	16	1	1
Idaho.....	5	1	4	1	63	6	2	0
Wyoming.....		3			1	2	0	0
Colorado.....	10	11			6	10	0	1
New Mexico.....	3	2	1	3	31	1	0	0
Arizona.....	8	6	56	54		1	0	0
Utah ¹		2			8	1	0	0
Pacific States:								
Washington.....		4	3		11	125	2	6
Oregon.....			30	24	11	230	2	2
California.....	59	52	65	23	26	127	6	2
Total.....	852	1,142	1,050	1,123	985	1,647	124	80
8 weeks of year.....	25,748	34,173	149,838	112,880	277,990	711,070	6,987	5,155

Division and State	Polioomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935
New England States:								
Maine.....	1	1	18	18	0	0	0	2
New Hampshire.....	0	1	14	16	0	0	0	0
Vermont.....	0	0	9	9	0	0	0	2
Massachusetts.....	0	5	144	167	0	0	1	2
Rhode Island.....	0	3	25	18	0	0	2	0
Connecticut.....	0	5	32	32	0	0	2	0
Middle Atlantic States:								
New York.....	3	17	310	479	0	0	9	9
New Jersey.....	0	6	74	97	0	0	4	4
Pennsylvania.....	7	2	296	233	0	0	16	8
East North Central States:								
Ohio.....	9	0	343	444	2	1	15	8
Indiana.....	3	0	80	160	1	5	0	4
Illinois.....	8	6	342	464	0	2	14	8
Michigan.....	2	1	191	201	0	0	4	3
Wisconsin.....	0	0	232	427	5	9	2	2
West North Central States:								
Minnesota.....	1	1	176	266	1	1	0	0
Iowa.....	4	0	71	107	5	3	1	28
Missouri.....	2	2	94	141	6	1	19	2
North Dakota.....	0	0	85	37	16	0	1	1
South Dakota.....	0	0	45	57	1	6	1	0
Nebraska.....	0	0	51	133	4	52	0	2
Kansas.....	2	1	164	96	12	5	3	3

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Nov. 28, 1936, and Nov. 30, 1935—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935	Week ended Nov. 28, 1936	Week ended Nov. 30, 1935
South Atlantic States:								
Delaware.....	0	1	8	11	0	0	0	1
Maryland ¹	0	6	59	104	0	0	6	13
District of Columbia.....	0	0	12	13	0	0	0	2
Virginia.....	4	2	54	47	0	0	8	4
West Virginia.....	1	1	52	91	0	0	9	4
North Carolina ²	1	2	82	58	0	0	13	5
South Carolina ²	0	2	10	7	0	0	0	2
Georgia ²	7	0	44	28	0	0	6	8
Florida.....	2	0	10	7	0	0	1	0
East South Central States:								
Kentucky.....	2	2	34	79	0	0	8	15
Tennessee ²	5	1	67	61	0	1	4	4
Alabama ²	0	2	27	18	0	0	18	5
Mississippi ²	4	3	24	19	0	0	14	7
West South Central States:								
Arkansas.....	1	4	7	16	1	0	4	2
Louisiana ²	5	0	9	14	0	0	14	10
Oklahoma ⁴	11	0	14	43	2	4	8	14
Texas ²	4	0	85	76	1	1	9	27
Mountain States:								
Montana.....	0	1	56	107	30	41	1	0
Idaho.....	1	1	23	36	1	1	4	3
Wyoming.....	0	0	8	90	0	4	0	0
Colorado.....	0	0	34	189	2	6	0	0
New Mexico.....	0	1	16	19	0	0	2	7
Arizona.....	0	2	37	25	0	0	3	1
Utah ²	0	0	20	100	0	0	0	0
Pacific States:								
Washington.....	2	2	50	93	0	37	1	4
Oregon.....	2	7	41	60	40	0	4	2
California.....	9	4	217	24 ^c	5	10	15	10
Total.....	103	95	3,896	5,259	135	190	246	238
48 weeks of year.....	4,292	10,500	216,314	227,148	6,823	6,685	13,857	16,739

¹ New York City only.² Week ended earlier than Saturday.³ Typhus fever, week ended Nov. 23, 1936, 27 cases, as follows: North Carolina, 1; South Carolina, 1; Georgia, 15; Tennessee, 1; Alabama, 7; Louisiana, 1; Texas, 1.⁴ Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Mala- ria	Meas- les	Pellag- ra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<i>October 1936</i>										
Alabama.....	6	208	83	2,948	3	11	30	117	1	63
Colorado.....	5	34			9		3	97	6	8
Kansas.....		51	9		6	1	31	332	6	11
Louisiana.....	4	86	52	146	7	17	2	42	0	49
Montana.....	3	4	72		8		4	244	67	19
Oklahoma ¹	6	63	241	109	16	14	34	59	10	73
Oregon.....	2	12	101	18	24		11	102	1	16
South Dakota.....	1	2	7		3		1	143	12	9
Tennessee.....	8	324	146	226	8	22	84	246	2	86
Texas.....	3	205	402	1,973	35	12	13	134	1	107
Virginia.....	19	259	475	122	25	6	8	149	0	86
Washington.....	3	6	18		30		9	156	8	24

¹ Exclusive of Oklahoma City and Tulsa.

Summary of monthly reports from States—Continued

October 1936	Cases	October 1936—Continued	Cases	October 1936—Continued	Cases
Chickenspox:		Impetigo contagiosa—Con.		Tetanus—Continued.	
Alabama.....	23	Tennessee.....	4	Louisiana.....	7
Colorado.....	76	Washington.....	5	Oklahoma ¹	1
Kansas.....	98	Mumps:		Tennessee.....	1
Louisiana.....	7	Alabama.....	45	Virginia.....	1
Montana.....	227	Colorado.....	29	Washington.....	1
Oklahoma ¹	36	Kansas.....	89	Trachoma:	
Oregon.....	80	Louisiana.....	6	Alabama.....	1
South Dakota.....	28	Montana.....	123	Montana.....	40
Tennessee.....	58	Oklahoma ¹	5	Oklahoma ¹	7
Texas.....	24	Oregon.....	54	Oregon.....	1
Virginia.....	44	Tennessee.....	8	South Dakota.....	1
Washington.....	471	Texas.....	48	Tennessee.....	48
Dengue:		Virginia.....	102	Trichinosis:	
Alabama.....	5	Washington.....	115	South Dakota.....	1
Dysentery:		Ophthalmia neonatorum:		Tularaemia:	
Alabama (amoebic)....	3	Tennessee.....	2	Oklahoma ¹	2
Kansas (amoebic)....	1	Virginia.....	1	Virginia.....	1
Kansas (bacillary)....	1	Paratyphoid fever:		Typhus fever:	
Louisiana (amoebic)....	13	Louisiana.....	1	Alabama.....	51
Louisiana (bacillary)....	3	Oregon.....	4	Louisiana.....	3
Montana (bacillary)....	25	Tennessee.....	2	Texas.....	43
Oklahoma ¹	54	Texas.....	3	Virginia.....	2
South Dakota.....	3	Virginia.....	6	Undulant fever:	
Tennessee (amoebic)....	8	Puerperal septicemia:		Alabama.....	5
Tennessee (bacillary)....	33	Washington.....	1	Colorado.....	1
Texas (amoebic).....	2	Rabies in animals:		Kansas.....	6
Texas (bacillary).....	9	Louisiana.....	18	Louisiana.....	7
Virginia (diarrhea in- cluded).....	706	Texas.....	3	Oklahoma ¹	6
Washington (bacillary)....	1	Washington.....	10	South Dakota.....	1
Encephalitis, epidemic or lethargic:		Rocky Mountain spotted fever:		Tennessee.....	4
Colorado.....	1	Oregon.....	1	Texas.....	4
Kansas.....	2	Tennessee.....	1	Washington.....	2
Louisiana.....	1	Scabies:		Vincent's infection:	
Montana.....	1	Colorado.....	7	Kansas.....	8
Oklahoma ¹	3	Kansas.....	3	Oregon.....	11
Tennessee.....	3	Oregon.....	82	Tennessee.....	12
Washington.....	5	Tennessee.....	2	Whooping cough:	
German measles:		Septic sore throat:		Alabama.....	51
Alabama.....	1	Kansas.....	3	Colorado.....	162
Kansas.....	5	Louisiana.....	5	Kansas.....	36
Montana.....	6	Montana.....	8	Louisiana.....	19
Tennessee.....	3	Oklahoma ¹	13	Montana.....	48
Washington.....	21	Oregon.....	6	Oklahoma ¹	19
Hookworm disease:		South Dakota.....	1	Oregon.....	85
Louisiana.....	12	Tennessee.....	11	South Dakota.....	3
Impetigo contagiosa:		Virginia.....	4	Tennessee.....	54
Colorado.....	19	Tetanus:		Texas.....	94
Oklahoma ¹	2	Alabama.....	8	Virginia.....	138
Oregon.....	111	Kansas.....	1	Washington.....	54

¹ Exclusive of Oklahoma City and Tulsa.

WEEKLY REPORTS FROM CITIES

City reports for week ended Nov. 21, 1936

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table. Weekly reports are received from about 700 cities, from which the data are tabulated and filed for reference.

State and city	Diphtheria cases		Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Small-pox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
	Cases	Deaths	Cases	Deaths								
Maine:												
Portland	1	0	1	1	1	1	0	3	0	1		26
New Hampshire:												
Concord	0	0	0	0	0	1	0	0	0	1		7
Manchester	0	0	0	4	1	0	0	0	0	0		24
Nashua	0	0	0	0	0	0	0	0	0	0		0
Vermont:												
Barre	0	0	0	0	0	0	0	0	0	0		2
Burlington	1	0	2	0	0	0	0	0	0	0		10
Rutland	0	0	0	1	0	0	0	0	0	0		7
Massachusetts:												
Boston	1	1	2	17	38	0	8	0	198			207
Fall River	1	0	0	0	1	0	2	0	2			25
Springfield	0	0	0	1	3	0	0	0	9			28
Worcester	0	0	14	5	5	0	3	0	42			56
Rhode Island:												
Pawtucket	0	0	0	0	1	0	0	0	0			26
Providence	0	0	2	12	0	2	0	18				70
Connecticut:												
Bridgeport	0	0	9	2	4	0	0	13				24
Hartford												
New Haven	0	0	2	0	1	0	0	0	2			38
New York:												
Buffalo	0	1	9	7	24	0	5	0	6			106
New York	25	13	3	42	97	0	75	4	86			1,344
Rochester	0	0	0	4	3	0	1	0	1			63
Syracuse	0	0	0	2	11	0	2	0	27			43
New Jersey:												
Camden	2	2	0	0	2	0	0	0	2			25
Newark	0	1	3	6	11	0	7	0	30			115
Trenton	0	1	0	2	1	0	1	1	1			30
Pennsylvania:												
Philadelphia	8	5	3	1	29	55	0	21	3	143		504
Pittsburgh	4	3	2	1	27	57	0	5	3	14		170
Reading	0	0	1	2	7	0	1	0	47			38
Scranton	0	0	0	0	2	0	0	0	2			0
Ohio:												
Cincinnati	3	0	1	13	6	0	8	0	5			145
Cleveland	0	10	0	1	10	39	0	13	2	33		190
Columbus	3	1	1	0	7	10	0	1	1	8		79
Toledo	2	2	1	1	7	4	0	2	0	18		72
Indiana:												
Anderson	0	0	0	0	11	0	1	0	2			9
Fort Wayne	0	0	0	1	2	0	1	0	0			19
Indianapolis	6	0	1	12	12	0	0	0	6			90
Muncie	0	0	0	1	0	0	1	0	0			9
South Bend	0	0	1	2	1	0	1	0	0			21
Terre Haute	0	0	0	0	4	0	0	0	0			19
Illinois:												
Alton	1	0	0	3	7	0	1	0	4			10
Chicago	6	4	3	4	31	146	0	24	2	60		623
Elgin	0	0	0	2	0	0	0	0	28			10
Moline	0	0	0	0	0	0	0	0	4			5
Springfield	2	0	0	1	4	0	0	0	19			25
Michigan:												
Detroit	24	2	1	7	17	78	0	19	0	86		246
Flint	2	0	0	0	9	0	0	0	7			25
Grand Rapids	0	0	0	1	14	0	0	0	13			31
Wisconsin:												
Kenosha	0	0	1	0	5	0	0	0	3			8
Milwaukee	2	2	2	5	31	2	8	0	37			103
Racine	0	0	2	0	5	0	0	0	5			10
Superior	0	0	1	1	2	0	0	0	5			11
Minnesota:												
Duluth												
Minneapolis	6	0	0	2	10	0	0	0	17			83
St. Paul	0	1	1	2	6	12	0	2	0	24		65

City reports for week ended Nov. 21, 1936—Continued

State and city	Diph- theria cases	Influenza		Mea- sles cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
Iowa:											
Cedar Rapids.....	0			0		3	0		0		
Davenport.....	0			0		2	0		0		
Des Moines.....	3			0		8	0		0		33
Sioux City.....	0			0		11	4		0		1
Waterloo.....	0			0		2	0		0		18
Missouri:											
Kansas City.....	4		0	2	9	24	0	7	0	1	98
St. Joseph.....											
St. Louis.....	7		0	0	5	57	0	0	3	20	200
North Dakota:											
Fargo.....	1		0	0	2	3	0	0	0	0	7
Grand Forks.....	0			0		0	0	0	0	0	
Minot.....	0		0	0	0	0	0	0	0	0	0
South Dakota:											
Aberdeen.....	0			0		1	0		0	0	
Nebraska:											
Omaha.....	1		1	1	4	4	0	0	0	3	64
Kansas:											
Lawrence.....	0		0	0	0	1	0	0	1	0	5
Topeka.....	0		0	0	1	5	0	1	0	0	17
Wichita.....	0		0	0	7	4	0	0	0	0	39
Delaware:											
Wilmington.....	0		0	1	3	0	0	0	0	1	29
Maryland:											
Baltimore.....	4	4	1	34	11	11	0	11	0	99	222
Cumberland.....	0		0	0	1	3	0	0	0	0	15
Frederick.....	0		0	0	0	0	0	0	0	0	2
District of Colum- bia:											
Washington.....	8		0	3	16	12	0	18	2	20	200
Virginia:											
Lynchburg.....	2		0	0	4	0	0	0	0	0	7
Norfolk.....	3		0	0	2	3	0	3	1	0	30
Richmond.....	0		1	0	1	8	0	1	2	1	60
Roanoke.....	5		0	0	5	2	0	0	0	0	16
West Virginia:											
Charleston.....	0		0	0	6	0	0	1	2	0	31
Huntington.....	4			0		5	0		0	0	
Wheeling.....	0		1	1	1	1	0	0	0	0	10
North Carolina:											
Gastonia.....	1		0	0	0	0	0	0	0	0	
Raleigh.....	1		0	0	2	1	0	2	0	0	19
Wilmington.....	0		0	0	1	2	0	0	2	0	12
Winston-Salem.....	2		0	0	2	0	0	0	0	0	13
South Carolina:											
Charleston.....	5	11	0	0	2	4	0	0	0	0	17
Columbia.....	0		0	0	4	0	0	1	0	0	20
Florence.....	1	0		0	0	1	0	0	0	0	5
Greenville.....	1	0		0	2	0	0	0	1	0	7
Georgia:											
Atlanta.....	1	24	0	1	11	12	0	5	1	0	103
Brunswick.....	0	1	0	0	0	0	0	0	0	1	3
Savannah.....	3	3	1	0	3	0	0	5	0	2	48
Florida:											
Miami.....	1	3	1	1	2	0	0	0	0	0	31
Tampa.....	1		0	0	1	1	0	1	0	0	21
Kentucky:											
Ashland.....	1			0	1	2	0		0	0	8
Covington.....	0		1	0	2	0	0	0	0	0	11
Lexington.....	0		0	0	2	2	0	2	0	0	22
Tennessee:											
Memphis.....	4		1	1	6	9	0	10	2	5	102
Nashville.....	2		0	0	5	4	0	2	0	0	52
Alabama:											
Birmingham.....	4	4	0	0	12	5	0	3	2	0	75
Mobile.....	1	1	0	0	1	1	0	1	0	0	27
Montgomery.....	0			0		1	0		0	0	
Arkansas:											
Fort Smith.....	0			0		1	0		0	0	
Little Rock.....	0		0	0	4	2	0	2	0	0	6
Louisiana:											
Lake Charles.....	0		0	0	1	0	0	0	1	0	5
New Orleans.....	14	2	0	0	14	10	0	16	1	2	154
Shreveport.....	0		0	0	7	1	0	0	0	0	30

City reports for week ended Nov. 21, 1936—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Small-pox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Oklahoma:											
Muskogee	2			0	1	1	0		0	0	
Oklahoma City	2			0	7	2	0	1	0	0	38
Tulsa	0			0		0	0		0	0	1
Texas:											
Dallas	1	1	1	1	11	16	0	3	2	14	88
Fort Worth	3		0	12	6	7	0	0	2	0	39
Galveston	1		1	0	4	0	0	2	0	0	22
Houston	12		1	0	10	5	0	3	0	6	83
San Antonio	0		2	0	8	3	0	10	0	0	67
Montana:											
Billings	0		1	0	1	2	1	0	0	0	6
Great Falls	0		0	0	1	1	0	0	0	2	8
Helena	0		0	0	0	0	0	0	0	0	2
Missoula	0		0	0	1	5	0	0	0	0	8
Idaho:											
Boise	0		0	0	1	1	0	0	0	0	11
Colorado:											
Colorado Springs	0		0	0	5	5	0	2	0	0	15
Denver	1		0	3	9	11	0	5	0	34	73
Pueblo	2		0	0	2	4	1	1	0	4	12
New Mexico:											
Albuquerque	0		0	0	0	1	0	3	0	0	11
Utah:											
Salt Lake City	0		1	2	4	7	0	1	0	5	37
Nevada:											
Reno											
Washington:											
Seattle	1		0	4	3	3	0	2	0	3	94
Spokane	0		0	0	2	6	0	0	0	4	27
Tacoma	0		0	0	0	4	0	0	0	0	26
Oregon:											
Portland	0		0	1	8	3	0	2	3	4	95
Salem	0			1		0			0	0	
California:											
Los Angeles	18	20	1	3	33	32	0	26	0	53	324
Sacramento	4		0	3	1	22	0	1	0	5	27
San Francisco	0		2	1	12	20	0	16	0	23	203

State and city	Meningococcus meningitis		Poliomyelitis cases	State and city	Meningococcus meningitis		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:							
Boston	1	0	0	Nebraska:			
New York:							
New York	5	4	0	Omaha	1	0	1
Rochester	1	1	0	Maryland:			
New Jersey:							
Newark	0	2	0	Baltimore	8	1	0
Pennsylvania:							
Philadelphia	1	0	1	West Virginia:			
Ohio:							
Cincinnati	2	1	3	Charleston	1	1	1
Cleveland	0	0	1	Kentucky:			
Columbus	1	0	0	Covington	1	0	0
Toledo	0	0	2	Lexington	1	0	0
Illinois:							
Chicago	3	1	2	Tennessee:			
Michigan:							
Detroit	3	3	1	Memphis	1	0	2
Iowa:							
Des Moines	1	0	1	Nashville	0	0	1
St. Louis	1	0	2	Oklahoma:			
California:							
Los Angeles				Oklahoma City	1	0	2
San Francisco				Tulsa	0	0	12
Texas:							
Colorado:							
Denver	0	1	0	Houston			
California:							
Los Angeles	1	0	3	Denver			
San Francisco	1	1	1	San Francisco			

Encephalitis, epidemic or lethargic.—Cases: New York, 1; Philadelphia, 1; Wichita, 1. Pellagra.—Cases: Atlanta, 1; Savannah, 1; Birmingham, 1; New Orleans, 1. Typhus fever.—Cases: Savannah, 1; Mobile, 1; Montgomery, 2.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—2 weeks ended November 14, 1936.—During the 2 weeks ended November 14, 1936, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada, as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis			1	1	3				1	6
Chicken pox		2	14	522	656	103	229	48	203	1,777
Diphtheria		7	2	62	14	7	3	1	2	98
Erysipelas				3						3
Dysentery				8	9	4	1	3	11	36
Influenza		3			3	1			13	20
Lethargic encephalitis				1	3					4
Measles				361	460	71	380	175	298	1,745
Mumps		16	6		189	8	29	26	279	553
Paratyphoid fever					2					2
Pneumonia					25		7		16	48
Polio-myelitis				12	15	25	5		1	58
Scarlet fever	4	20	6	259	323	152	46	222	99	1,131
Smallpox								1		1
Trachoma						1				1
Tuberculosis	4	68	22	96	82	9	21	3	15	320
Typhoid fever	1		4	46	9	14	7	1	8	90
Undulant fever				1	6		1		1	9
Whooping cough		21		197	330	18	65	8	42	681

CUBA

Habana—Communicable diseases—4 weeks ended November 21, 1936.—During the 4 weeks ended November 21, 1936, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis	1	1	Tuberculosis	13	
Diphtheria	12		Typhoid fever	32	6
Malaria	106	4			

¹ Includes imported cases.

Provinces—Notifiable diseases—4 weeks ended November 14, 1936.—During the 4 weeks ended November 14, 1936, certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer.....	1	-----	-----	8	-----	6	15
Cerebrospinal meningitis.....	-----	-----	-----	-----	-----	1	1
Chicken pox.....	-----	-----	-----	-----	-----	1	1
Diphtheria.....	2	1	1	1	1	2	8
Hookworm disease.....	-----	2	-----	-----	-----	-----	2
Leprosy.....	-----	9	2	-----	3	4	18
Malaria.....	354	122	86	291	700	518	2,071
Measles.....	-----	-----	-----	-----	-----	1	1
Poliomyelitis.....	-----	-----	1	-----	-----	-----	1
Tetanus, infantile.....	-----	-----	-----	-----	-----	-----	1
Tuberculosis.....	6	13	59	45	17	11	151
Typhoid fever.....	40	33	18	23	11	31	151

DENMARK

Communicable diseases—July–September 1936.—During the months of July, August, and September 1936, cases of certain communicable diseases were reported in Denmark as follows:

Disease	July	August	September	Disease	July	August	September
Cerebrospinal meningitis.....	4	2	4	Paratyphoid fever.....	26	22	11
Chicken pox.....	8	9	7	Poliomyelitis.....	11	11	7
Diphtheria and croup.....	98	130	103	Puerperal fever.....	8	19	20
Epidemic encephalitis.....	1	4	3	Scabies.....	435	849	1,024
Erysipelas.....	243	225	257	Scarlet fever.....	323	505	949
German measles.....	75	9	17	Syphilis.....	70	55	87
Gonorrhoea.....	942	1,009	1,062	Tetanus, neonatorum.....	9	6	3
Influenza.....	2,542	2,388	3,390	Tetanus, traumatic.....	1	-----	-----
Malaria.....	9	17	5	Typhoid fever.....	2	3	7
Measles.....	108	73	84	Undulant fever (Bact. abort. Bang).....	48	46	53
Mumps.....	291	242	257	Whooping cough.....	2,008	2,000	1,818
Paratyphoid fever.....	76	51	72				

YUGOSLAVIA

Communicable diseases—October 1936.—During the month of October 1936, certain communicable diseases were reported in Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax.....	83	7	Paratyphoid fever.....	27	-----
Cerebrospinal meningitis.....	4	1	Poliomyelitis.....	11	2
Diphtheria.....	1,457	122	Scarlet fever.....	767	8
Dysentery.....	100	13	Sepsis.....	11	4
Erysipelas.....	321	12	Tetanus.....	48	20
Measles.....	1,500	-----	Typhoid fever.....	869	99

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appears in the PUBLIC HEALTH REPORTS for November 27, 1936, pages 1659-1673. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued December 25, 1936, and thereafter, at least for the time being, in the issue published on the last Friday of each month.

Plague

Argentina—Cordoba Province—Villa Dolores.—During the period November 1-15, 1936, 1 case of plague was reported in Villa Dolores, Cordoba Province, Argentina.

Hawaii Territory—Island of Hawaii—Hamakua District—Paauhau Sector.—One rat found on November 23, another rat found on November 27, and also another rat found on November 30, 1936, in Paauhau Sector, Hamakua District, Island of Hawaii, Hawaii Territory, have been proved plague infected.

Smallpox

Brazil—Recife.—During the week ended October 31, 1936, 3 cases of smallpox (alastrim) were reported in Recife, Brazil.

Yellow Fever

Colombia.—Yellow fever has been reported in Colombia as follows: Restrepo; month of July, 1 death, September 9, 1 death: Santander Department, month of July, 1 death.

Sierra Leone—Freetown.—On November 16, 1936, 1 suspected case of yellow fever was reported in Freetown, Sierra Leone.